REMARKS

The specification is being amended to recite the new figures proposed to be added, Figs. 22 - 24. This amendment appears at page 11, line 19. The description added at page 11 merely recites that the figures show what is described and do not add new matter.

Figure 22 shows a cone of revolution with cross-section cuts in the shape of an ellipse, parabola and hyperbola. Support for this figure resides in the specification at: page 3, lines 3-10, lines 18-20, and lines 22-24. A cone section in the claims is referred to in its solid geometry meaning, that being a section of a plane with the peripheral surface of a cone, wherein the inclination between the plane and the axis of the cone determines whether the section is an ellipse or circle, a parabola or a hyperbola, the cone angle being defined as the angle at the tip of a triangle which occurs as an axial section of the cone. The various curves (ellipse, parabola, hyperbola) are defined by their standard plane geometry and solid geometry meanings.

Figures 23 and 24 illustrate methods of manufacturing the optical modifier. Support resides in the specification at: page 3 as recited above; page 5, lines 15-16 and lines 20-22; page 8, line 8-10, lines 12-17; page 9, lines 1-3, line 24-28, and lines 30-31; page 10, lines 18-20; page 11, lines 22-24; page 17, lines 14-17; page 18, lines 3-26; and page 19, lines 1-6. Support also resides in Figs. 15-21 of record.

Respectfully submitted,
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preferably an on/off switch, a reflecting/transmitting switch, or a selection switch. An on/off switch serves to selectively allow or not allow several wavelength channels to transmit. A reflecting/transmitting switch serves to selectively allow one or more wavelength channels to be transmitted or reflected. Lastly, a selection switch serves to guide one or more wavelength channels selectively in one direction or the other. The selection switch can be realised, for example, by means of a prism that, if required, can be inserted into the beam path.

The present invention also relates to a method for manufacturing an optical modifier. It is therefore also the object of the present invention to provide a method that allows an optical modifier to be manufactured inexpensively and above all with a high degree of accuracy.

According to the invention, this object is solved in that the coupling device of the optical modifier is produced, at least along one section, as a rotational solid, that in profile follows a cone section. This has the advantage that the curved surface can be manufactured, for example, by means of turning or milling <u>and/ or polishing</u> , preferably from solid material. By means of turning or milling, highly precise configuration of the reflecting surface is possible. Clearly, the curved surface can also be approximated by small, planar surfaces that fit together in the manner of facets.

The material from which the coupling device of the optical modifier is manufactured can be almost a free choice. Particularly preferred use is made of copper or glass, optionally also silicon or another material with a high degree of heat conductivity and low thermal expansion coefficients.

When the material is preferably selected such that it reflects in the range of the reflecting surface for the desired wave range, it is clearly also possible to produce the coupling device from a transparent material and to vapour deposit a reflecting layer, for example, a metal layer, in the reflecting range. According to the application, it can be advantageous when the reflecting surface is coated and/or polished.

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Further advantages, features, and possibilities for application of the present invention will become evident from the following description of preferred embodiments, and the attached drawings.

In these is shown, in

Figures 1 a - d a first embodiment of the coupling device as used in the optical modifier according to the invention, in a schematic view, a sectional view, a plan view, and a perspective view,

Figures 2a- d a second embodiment of the coupling device, in a schematic view, a sectional view, a plan view, and a perspective view,

Figures 3 a - d a third embodiment of the coupling device, in a schematic view, a sectional view, a plan view, and a perspective view,

Figures 4a and b a fourth embodiment of the coupling device in two perspective views,

Figures 5a - d a fifth embodiment of the coupling device in a schematic view, a sectional view, and two perspective views,

Figure 6 a first embodiment of the optical modifier,

Figures 7 to 14 further embodiments of the optical modifier, ~~and~~

Figures 15 to 21 several views of a particularly compact embodiment,

Figure 22 a cross-sectional view of a cone showing various cuts described,

Figure 23 a block diagram of manufacturing method described, and

Figure 24 a more detailed block diagram of the manufacturing method.

The coupling device that is used in the optical modifier according to the invention will be explained firstly. In Figures 1 a to 1 d there is thus shown a first embodiment of the coupling device according to the invention. Firstly, in Figure la, the diversion principle is demonstrated. A reflecting surface 2 has a profile following the shape of a parabola 5. Perpendicular to the plane of the parabola 5, the curvature of the surface 2 is circular, as it forms the segment of the surface of a rotational solid. At the focal point B of the parabola, an optical beam 3 expands, which beam impinges upon the reflecting surface 2, and leaves the coupling device as a reflected beam 4. Clearly, the beams

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